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| 10/777,552 | 02/12/2004 | Daniel A. Hammer | UPN-4290 | 6019 |

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| EXAMINER | |
|---|---|
| SCHLIENTZ, LEAH H | |
| **ART UNIT** | **PAPER NUMBER** |
| 1618 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/777,552 | HAMMER ET AL. | |
| | Examiner | Art Unit | |
| | Leah Schlientz | 1618 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *04 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) *6-9, 14, 24-31, 43-45, 47-51, 56-59, 64, 66-69, 76, 77, 80-87, 102-107, 109-117, 119-131, 133-141, 143-153, 155-166, 168-170 and 172-184* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4, 5, 10, 12, 13, 15-23, 32-42, 46, 52, 55, 60, 63, 65, 70-75, 78, 79 and 88-101* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1,4-10,12-52,55-60,62-107,109-117,119-131,133-141,143-153,155-166,168-170 and 172-184.

## DETAILED ACTION

### *Acknowledgement of Receipt*

Applicant's Response, filed 3/4/08, in reply to the Office Action mailed 9/5/07, is acknowledged and has been entered. Claims 1, 4-10, 12-52, 55-60, 62-107,109-117, 119-131, 133-141, 143-153, 155-166, 168-170 and 172-184 are pending, of which claims 6-9, 14, 24-31, 43-45, 47-51, 56-59, 64, 66-69, 76, 77, 80-87, 102-107, 109-117, 119-131, 133-141, 143-153, 155-166, 168-170 and 172-184 are withdrawn from consideration at this time as being drawn to a non-elected invention. Claims 1, 4, 5, 10, 12, 13, 15-23, 32-42, 46, 52, 55, 60, 63, 65, 70-75, 78, 79 and 88-101 are readable upon the elected invention and species and are examined herein on the merits for patentability.

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/4/08 has been entered.

### *Response to Arguments*

Applicant's arguments, see pages 32 – 43 of the Response, with respect to the rejection(s) of claim(s) 1, 3-5, 10, 12, 13, 15-23, 32-42, 46, 52, 53, 55, 60, 63, 65, 70-75, 78, 79 and 88-101 under 35 U.S.C. 103(a) as being unpatentable over Klaveness (US 6,159,445) and Unger (US 6,123,923), in view of Lee (*Biotechnol. and Bioeng.,* 2001, 73, 135-145), in further view of Lin (*Chem. Eur. J.*, 1995, 1, 645-651) have been fully considered, but are moot in view of a new ground(s) of rejection is made in view of a different interpretation of the previously applied references.

### *New Grounds for Rejection*

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 5, 10, 12, 13, 15 - 23, 32 – 42 and 46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are dependent upon claim 2, which is a cancelled claim. Therefore the metes and bounds of the claims are not clearly set forth and the scope of the invention cannot be fully ascertained.

Claims 55, 60, 62, 63, 65, 70, 71 – 75, 78, 79 and 88 – 101 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and

distinctly claim the subject matter which applicant regards as the invention. The claims are dependent upon claim 53, which is a cancelled claim. Therefore the metes and bounds of the claims are not clearly set forth and the scope of the invention cannot be fully ascertained.

Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are dependent upon claim 11, which is a cancelled claim. Therefore the metes and bounds of the claims are not clearly set forth and the scope of the invention cannot be fully ascertained.

Claims 62 and 63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are dependent upon claim 61, which is a cancelled claim. Therefore the metes and bounds of the claims are not clearly set forth and the scope of the invention cannot be fully ascertained.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 4, 10, 15, 22, 23 and 32 - 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faustino *et al.* (*Photochem. Photobiol.*, 1997, 66(4), p. 405-412) in view of Lee *et al.* (*Biotechnol. and Bioeng.,* 2001, 73, p, 135-145).

Faustino discloses meso-tetraphenylporphyrin dimer derivative (D1) as a potential photosensitizer in photodynamic therapy (page 405). Long wavelength absorption occurs at 647 nm with an $\varepsilon_{max}$ increased by a factor of two as compared to monomeric porphyrin (page 406, left column). The corrected fluorescence spectrum indicates fluorescence emission within the claimed range (inset figure 2). The fluorescence quantum yield is a reasonable value for use in PDT. The relatively large molar absortvity in the red spectral region allows for the administration of lower photosensitzer dose without impairing the phototherapeutic efficacy. The porphyrin is administered via incorporation into liposome (page 410, right column; page 406).

Faustino discloses a conjugated porphyrin dimer which is administered via liposome, rather than via a polymersome comprising amphiphilic block coplymers, as claimed.

Lee discloses polymersomes made from amphiphilic diblock copolymers, including poly(ethylene oxide) – poly(butadiene) (PEO-PBD). The PEO (i.e. hydrophilic) fraction of the vesicle-forming polymer PEO-PBD is 0.28 (pages 135 – 136), as set forth above. Lee teaches that vesicles made completely from di-block copolymers – polymersomes – can be stably prepared by a variety of techniques common to liposomes. These thick-walled vesicles of polymer can encapsulate macromolecules, just as liposomes, but exhibit no in-surface thermal transitions. Suspension in blood plasma has no immediate ill-effect on vesicle stability (see abstract and pages 140 – 144). The polymersomes may incorporate a fluorophore (i.e. LAURDAN) within the membrane for fluorescence imaging (page 142).

It would have been obvious to one of ordinary skill in the art to substitute a polymersome vesicle comprising copolymers of PEO-PBD for the liposome vesicle used for administration of the D1 photosensitizer in photodynamic therapy employed by Faustino. One would have been motivated to do so, and would have had a reasonable expectation of success in doing so, because Lee teaches such polymersomes to be superior to traditional liposomes or “stealth” liposomes (pegylated liposomes) for encapsulation technologies because of their thicker, more robust membranes. The polymersomes were found to be biocompatible and non-toxic in cell culture. Furthermore, the polymersomes were also shown to be capable of incorporating an emissive agent within the membrane for fluorescence imaging.

Claims 52, 54, 55, 60, 65, 74, 78 and 88 – 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faustino *et al.* (*Photochem. Photobiol.*, 1997, 66(4), p. 405-412) in view of Lee *et al.* (*Biotechnol. and Bioeng.,* 2001, 73, p, 135-145) as applied to claims 1, 4, 10, 15, 22, 23 and 32 – 42 above, in (further) view of Klaveness (US 6,159,445).

Klaveness discloses particulate light imaging contrast agents. Preferably, the particles are substantially monodisperse polymer particles which may be modified to carry a chromophore (or fluorophore), preferably having characteristic absorption and/or emission maxima in the 600 to 1300 nm range. The compositions may be used in optical imaging as well as photodynamic therapy agents. Furthermore they may be modified to include or carry a targeting vector, e.g. a species serving to cause the particles to accumulate at a desired target site, for example a drug, antibody, antibody fragment or peptide (e.g. an oligopeptide or polypeptide) which has a binding affinity for sites within the target zone, e.g. cell surface receptors (column 10, lines 9 – 29). The particulate materials may be in the form of liposomes, liposomes covalently bearing PEG moieties, liposomes containing amphiphathic compounds, etc. (column 12 – 14). Klaveness also discloses polymeric and copolymeric particles, including those made of amphiphilic block copolymers (column 17, lines 25-30; lines 49-50) are suitable.

The rejection of claims 1, 4, 10, 15, 22, 23 and 32 – 42 as being unpatentable over Faustino in view of Lee is applied as above. With regard to claims 52, 54, 55, 60, 65, 74, 78 and 88 – 101, it would have been further obvious to include a targeting moiety on the vesicle when the teachings of Faustino and Lee are taken in view of

Klaveness. One would have been motivated to do so, and would have had a reasonable expectation of success in doing so because such modification has the benefit of allowing the particle to accumulate at a target site.

Claims 1, 4, 5, 10, 12, 13, 15-23, 32-42, 46, 52, 55, 60, 63, 65, 70-75, 78, 79 and 88-101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klaveness (US 6,159,445) and Unger (US 6,123,923), in view of Lee (*Biotechnol. and Bioeng.,* 2001, 73, 135-145), in further view of Lin (*Chem. Eur. J.,* 1995, 1, p. 645 – 651).

Klaveness discloses particulate light imaging contrast agents. Preferably, the particles are substantially monodisperse polymer particles which may be modified to carry a chromophore (or fluorophore), preferably having characteristic absorption and/or emission maxima in the 600 to 1300 nm range. Klaveness also teaches that the molar absorptivity and quantum yield for fluorescence are one of the most important characteristics, which should be as high as possible (column 16, lines 1 – 35). Furthermore they may be modified to include or carry a targeting vector, e.g. a species serving to cause the particles to accumulate at a desired target site, for example a drug, antibody, antibody fragment or peptide (e.g. an oligopeptide or polypeptide) which has a binding affinity for sites within the target zone, e.g. cell surface receptors (column 10, lines 9 – 29). The particulate materials may be in the form of liposomes, liposomes covalently bearing PEG moieties, liposomes containing amphiphathic compounds, etc. (column 12 – 14). Klaveness also discloses polymeric and copolymeric particles, including those made of **amphiphilic block copolymers** (column 17, lines 25-30; lines

49-50) are suitable. The photolabel (i.e. chromophore or fluorophore) may be fluorescein, phthalocyanine, porphyrin or porphyrin analogues, particularly fluorophores having an emission maximum at a wavelength above 600 nm (column 16, lines 1 – 20).

Unger discloses methods for diagnosing the presence of diseased tissue in a patient comprising administering to a patient a composition comprising a stabilizing material and a photoactive agent and scanning the patient using optical imaging and ultrasound imaging to obtain visible images (column 1, lines 34 – 40). The stabilizing material is a liposome or other vesicle, including vesicles formed from polymers which may be of natural, semi-synthetic, or synthetic origin (column 24, lines 58 – 63 and claims 1 – 4). Preferred synthetic polymers or copolymers are those comprising acrylic acid, ethylene glycol dimethyacrylates, poly(ethylene oxide), etc. (column 25, lines 40+). The photoactive agent is active in a wavelength from about 500 nm to about 1400 nm, including the infrared wavelength (claims 8 and 9). The photoactive agent may be a fluorescent material, and may be a variety of substances, including fluoresceins, porphyrins, metalloporphyrins, benzoporphyrins, indocyanine green, etc. (claims 10 – 12). The photoactive agents may be integrated within the wall(s) of the vesicle, for example, by being interspersed among stabilizing materials which are contained within the vesicle layer(s) or wall(s) (column 10, lines 14 – 20). The compositions are used for optical imaging, or the production of visible representations of tissue or regions of a patient with electromagnetic energy in the spectral range between ultraviolet and infrared and analyzing either the reflected, scattered, absorbed and/or fluorescent energy produced as a result of the irradiation (column 6, lines 7 – 17). The

compositions may further comprise a targeting moiety, which may be a protein, peptide, etc. (claims 19 – 23).

With regard to claims 32 – 42, Klaveness does not recite the specific identity of the amphiphilic block copolymers, and Unger fails to specifically recite that the polymers or copolymers which are used to form the polymeric vesicles are amphiphilic copolymers, though it is noted that various hydrophilic (i.e. polyethylene glycol) and hydrophobic polymers are exemplified, and copolymers which are combinations thereof (i.e. copolymers which are combinations of hydrophilic / hydrophobic polymers) are possible embodiments of the compositions taught by Unger. It is for this reason that Lee is joined.

Lee discloses made from amphiphilic diblock copolymers, including poly(ethylene oxide) – poly(butadiene) (PEO-PBD). The PEO (i.e. hydrophilic) fraction of the vesicle-forming polymer PEO-PBD is 0.28 (pages 135 – 136), as set forth above. Lee teaches that vesicles made completely from di-block copolymers – polymersomes – can be stably prepared by a variety of techniques common to liposomes. These thick-walled vesicles of polymer can encapsulate macromolecules, just as liposomes, but exhibit no in-surface thermal transitions. Suspension in blood plasma has no immediate ill-effect on vesicle stability (see abstract and pages 140 – 144). The polymersomes may incorporate a fluorophore (i.e. LAURDAN) within the membrane for fluorescence imaging (page 142).

With regard to claims 5 and 16 – 17, Klaveness and Unger do not specifically recite ethynl- or butiadienyl- bridged multiporphyrin compounds which are included as the fluorophore or chromophore. It is for this reason that Lin is joined.

Lin discloses ethynyl- and butynyl-bridged bis- and tris-(porphinato)zinc chromophores. A variety of points of connectivity joining various (porphinato)zinc moieties via ethynl or butadiene groups, including meso, meso-to-β, or β-to-β linkage topologies, were investigated. The absorptive and emissive signatures of the supramolecular structures are dramatically modulated by such structural modification. The magnitude of spectral modification attainable with the systems are far greater than that attainable with a single porphyrin chromophore (page 650). For example, the extent of absorptive and emissive modulation possible in the series of such compounds is depicted in Figure 4. Structure 8, in which two ethyne moieties connect three (5,15-diphenylporphinato)zinc macrocycles at meso positions has a B-band FWHM (full width at half maximum) of nearly 5000 $cm^{-1}$, a Q-band FWHM of 1485 $cm^{-1}$, absorbs at around 550 nm and 800 nm, and emits at 835 nm (page 649). The supramolecular multiporphyrin complexes may be used in the development of dyes, sensitizers, optical probes, etc. (page 645).

Lin fails to disclose that the ethyne-linked porphyrin moieties are embedded within a polymeric membrane.

It would have been obvious to one of ordinary skill in the art, at the time of the instant invention, to provide amphiphilic copolymers of PEO-PBD, which self-assemble to form polymersomes (i.e. polymeric vesicles) as taught by Lee, as the polymeric

vesicles in the compositions taught by Klaveness or Unger, which also comprise various photoactive agents, including porphyrin and porphyrin derivatives within the vesicle membrane and are used for optical imaging purposes. One would have been motivated to do so because Klaveness teaches that amphiphilic block copolymers are suitable vesicles, and because Lee teaches such polymersomes to be superior to traditional liposomes or "stealth" liposomes (pegylated liposomes) for encapsulation technologies because of their thicker, more robust membranes. The polymersomes were found to be biocompatible and non-toxic in cell culture. Furthermore, the polymersomes were also shown to be capable of incorporating an emissive agent within the membrane for fluorescence imaging. It would have been further obvious to select ethyne-linked porphyrin moieties as the porphyrin derivative to represent the photoactive agent in the compositions of Klaveness or Unger because Unger and Klaveness teach that a variety of fluorophores or chromophores may be incorporated, and because Therein teaches ethynyl- bridged bis- and tris-(porphinato)zinc compounds to have variable absorption / emission spectra depending on structural modification, including those capable of absorbing / emitting around 800 nm, and because such compounds may be employed in optical proves, sensitizers, etc. One would have been motivated to do so, and would have had a reasonable expectation of success in doing so because Klaveness teaches the importance of fluorophores which have an emission maximum above 600 nm, as well as the importance of high molar absorptivity (e.g. $10^5$ cm/M) and high quantum yield as important factors in the choice of photolabels. The compounds of Therein clearly meet these requirements of desirable wavelength and absorptivity (Figures 1-4).

Therein teaches that the compounds may be used as optical probes. Klaveness also teaches that the most interesting wavelengths for light imaging techniques are those in the range of 600 – 1300 nm because these wavelengths have the ability to penetrate relatively deeply into living tissue without absorption by natural substances and also are harmless to the human body (column 3, lines 25 – 33). One of ordinary skill would have been able to substitute one known emissive agent having desirable optical properties for another with the expected result of achieving optical imaging employing a fluorescence emitting polymeric membrane.

Applicant argues on pages 32 – 34 of the Response that claim 1 is directed to a polymersome comprising two elements (1) a membrane comprising amphiphilic copolymer that have at least one hydrophilic polymer bonded to at least one hydrophobic polymer and (2) and emissive agents that emit light in the 700-1100 nm spectral regime and where the emissive agent is an emissive conjugated compound comprising at least two covalently bound moieties; whereby upon exposing the compound to an energy source for a time and under conditions effective to cause the compound to emit light that at a wavelength between 700-1100 nm, the compound exhibits an integral emission oscillator strength that is greater than the emission oscillator strength manifest by either one of the moieties individually. Applicant argues that neither Klaveness nor Unger teach or suggest the emissive agent or amphiphilic copolymers of the instant claims and that all elements of the invention would have to be imported from other references. Applicant argues that the extent of reconstruction

necessary to allegedly arrive at any instant claim is simply too extensive to be consistent with obviousness.

This is not found to be persuasive. Klaveness teaches vesicles composed of amphiphilic copolymers, as set forth above. With regard to the emissive agent, it is noted that the claimed emissive agent is broadly defined using functional language. At least some of the fluorophores or chromophores disclosed by Klaveness or Unger meet at least the independent claims with regard to the agent of at least the independent claim (e.g. as an example, indocyanine green is known to emit light within the claimed range and comprises conjugated "moieties," also photofrin includes conjugated porphyrins).

Applicant further argues that it is improper to piece together teachings of the prior art by hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant argues that in regard to claim 16, there is simply nothing in the Klaveness or Unger patents to suggest use of an ethynl or butadiynl bridged multi(porphyrin) compound that features an β-to-β, meso-to-β or meso-to-meso linkage topology. Applicant recites that even though the prior art inventors list porphyrin in their broad list of emissive agents, there is no evidence to suggest that they would have conceived of such emissive agents having the property that upon exposing the agent to an energy source for a time and under conditions effective to cause the agent to emit light between 700-1100 nm and exhibit an integral oscillator strength that is greater than emission oscillator strength manifested by either one of the moieties individually.

This is not found to be persuasive. Klaveness teaches that a variety of fluorophore compounds may be incorporated, and clearly teaches the desirable spectral features of suitable fluorophores and reasoning for why such spectral features are important in liposomal or polymeric vesicles for optical imaging. Therien teaches compounds meeting these spectral features, and teaches that they may be used in optical probes. One of ordinary skill would have been able to substitute one known emissive agent having desirable optical properties for another with the expected result of achieving optical imaging employing a fluorescence emitting polymeric membrane.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 4, 5, 10, 12, 13, 15-23, 32-42, 46, 52, 55, 60, 63, 65, 70-75, 78, 79 and 88-101 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of copending Application No. 10/467,107. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to a polymeric host or vesicle and an emissive agent comprising covalently bound porphyrin moieties. Thus the claims are overlapping in scope and are obvious variants of one another. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

## ***Conclusion***

No claims are allowed at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leah Schlientz whose telephone number is 571-272-9928. The examiner can normally be reached on Monday - Friday 8 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Hartley can be reached on 571-272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael G. Hartley/
Supervisory Patent Examiner, Art Unit 1618

LHS